

A NEW SPECIES OF *CASTILLEJA* (SCROPHULARIACEAE) FROM
CHIHUAHUA, MEXICO

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ABSTRACT

A new species from west-central Chihuahua is described: *Castilleja lebgueana* Nesom. It is the third known species of the "Ortegae group," which is formally recognized here as *Castilleja* sect. *Ortegae* Nesom (*sect. nov.*). The three species of sect. *Ortegae* occur in the sierras of western and southwestern México, mostly on the Pacific slope.

KEY WORDS: *Castilleja*, Scrophulariaceae, Chihuahua, México

Recent intensive collecting within Parque Nacional "Cascada de Basaseachi" has brought to light an undescribed species of *Castilleja*. To provide a valid name for citation in a checklist of vascular plants of the park (R. Spellenberg, T. Lebgue, and R. Corral D. in prep.), the species is formally described here.

Castilleja lebgueana Nesom, *sp. nov.* TYPE: MEXICO. Chihuahua, Mpio. Ocampo, Parque Nacional "Cascada de Basaseachi, along the Río Candamena ca. 1/2 km downstream from the base of the cascada, just above the bend in the river; 108° 12'30"W, 28° 11'N; shaded cleft in large boulder receiving afternoon sun, only one plant seen, elev. 1600 m, 24 May 1994, R. Spellenberg 12034 with R. Miller (HOLOTYPE: NMC!).

Castilleja ortegae Standley maxime affinis sed duratione annua, calyce dentati-lobato, et floribus sigillatim angustioribus corollis brevioribus differt.

Annuals (evidently) from a short slender taproot. Stems 24-36 cm tall, herbaceous from base to apex, very distinctly green-ribbed, the ribs apparently

originating as decurrent leaf bases, short-pilose with a mixture of stipitate-glandular hairs and non-glandular hairs 0.2-0.5 mm long. Leaves spreading to slightly deflexed, on internodes 5-15 mm long, narrowly oblong-lanceolate, entire, 3-veined (outer pair near the margins), 12-30 mm long, 3.0-3.5(-4.0) mm wide, sessile, barely but perceptibly decurrent, not at all clasping, mostly strigose-hispid above and beneath with loosely appressed to arching, non-glandular, sharp-pointed hairs, sometimes slightly stipitate-glandular near the base. Floral bracts spreading-ascending, green, the lower identical to the uppermost leaves, very slightly reduced in size upwards. Inflorescence a distinctly secund raceme 7-12 cm long, the flowers spreading to slightly ascending, separated by internodes 3-5 mm long; rachis and pedicels stipitate-glandular; pedicels 1-4 mm long. Calyx densely stipitate-glandular, greenish-pink or more strongly reddened distally, thin-hyaline at the base, slightly curved, not at all medially constricted, 17-20 mm long, the lateral lobes broadly dentate with shallow (1.0-1.5 mm) attenuate teeth, the abaxial cleft 6-9 mm deep, the adaxial clefts ca. 3 mm deep. Corolla light creamy-yellow, 19-25 mm long, the galea ca. 1/3 the tube length, very sparsely bearded near the apex, exerted 5-8 mm from the calyx, the lower lip of 3, linear, thickened, green teeth; stigma abruptly clavate apically. Mature fruits not observed.

Castilleja lebgueana is named for Toutcha Lebgue of the Universidad Autónoma de Chihuahua (Cd. Chihuahua), who is collaborating with Richard Spellberg in the production of a documented checklist of the Basaseachi flora.

Castilleja lebgueana is most similar and presumably most closely related to *C. ortegae* Standley, and in turn, to the more recently described *C. pterocaulon* N. Holmgren (Holmgren 1976). This group (the "Ortega group" sensu Holmgren) is characterized by narrow, entire, spreading leaves, a strongly secund inflorescence with green floral bracts, irregularly cleft calyces, and corollas with a short galea (about 1/3-1/4 the length of the corolla tube). Plants of the two earlier-named species are clearly perennial (vs. apparently annual in *C. lebgueana*). *Castilleja pterocaulon* is endemic to the Sierra de Manantlán and Sierra de Cuale of southern Jalisco. *Castilleja ortegae* has been collected a number of times from the region near its type locality in southern Sinaloa and into north-central Durango. Holmgren (1976) has noted that the species also occurs in Chihuahua and Sonora, but I have not studied specimens of it from this more northern region. These Chihuahuan and Sonoran plants may prove to be *C. lebgueana*; otherwise, the latter is known only from the type collection.

The three species of the Ortega group are distinguished by the following contrasts.

1. Plants perennial; stems and calyces eglandular; the green cauline ribs strongly contrasting with the stramineous stem; leaves linear to filiform.
 *C. pterocaulon*

- 1. Plants perennial or annual; stems and calyces stipitate-glandular; the green cauline ribs nearly the same color as the stems; leaves narrowly elliptic to linear- or oblong-lanceolate. (2)
- 2. Plants apparently annual from a slender taproot and herbaceous stems; calyx relatively narrow (2-3 mm wide, pressed), the two lateral lobes secondarily lobed, broadly dentate; corollas 19-25 mm long, with galea 6-8 mm long. *C. lebqueana*
- 2. Plants distinctly perennial from a woody root and basally woody stems; calyx relatively broader (4-5 mm wide, pressed), the two lateral lobes entire and apically rounded; corollas (23-)27-32 mm long, with galea 9-12 mm long. *C. ortegae*

The *Ortegae* group is most similar in features of the inflorescence and corollas to *Castilleja* sect. *Epichroma* Benth., but the latter has pectinately divided leaves with filiform segments, and four of the five species are annuals. Holmgren (1978, p. 193) observed that "the leaves of *C. tayloriorum* N. Holmgren of Costa Rica are reminiscent of the species of sect. *Epichroma* Benth.," but they are very different in floral morphology and their foliar resemblance is convergent. Holmgren (1976, p. 206-207) noted that "The nearly funnellform calyx, the longer corolla tube in proportion to the galea, and the secund inflorescence of the *Ortegae* species is similar to that of the *Epichroma* species, whereas the entire, sometimes reflexed, narrow leaves [of the *Ortegae* species] are similar to those in the members of the *Tenuiflorae* group [= sect. *Castilleja*] The floral and vegetative characteristics of the [*Ortegae*] species represent a transition between the typical taxa of the [sect.] *Castilleja* and the species of [sect.] *Epichroma*."

Plants of sect. *Castilleja* (*C. fissifolia* L.f., the type) are characterized by deeply and irregularly cleft calyces and corollas with the galea about the same length as the tube. All Mexican species with an irregularly cleft calyx (sect. *Castilleja* — 19 species, Sect. *Epichroma* Benth. five species, and the *Ortegae* group) are treated in a key (Nesom 1992).

Holmgren (1976) noted that the *Ortegae* group is "a distinctive group worthy of sectional status, but the formal definition of such groups must await a more thorough understanding of the entire genus." A discussion of the broad structure of the genus and problems in sectional delimitation has recently been published by Chuang & Heckard (1991), who recognize three subgenera, including a broadly inclusive subg. *Castilleja*. While the rank of any infrageneric group of the genus will certainly be subject to review, I agree that the *Ortegae* group should be formally recognized. There are no other species that might be equivocally placed within it, and its closest relative appears to be sect. *Epichroma*, an equally distinctive group. The *Ortegae* group is treated here as

a section, in view of its distinctive morphology and its apparent intermediate position between sect. *Castilleja* and sect. *Epichroma*.

Castilleja sect. **Ortegae** Nesom, *sect. nov.* TYPE: *Castilleja ortegae* Standley.

Castillejae sect. *Epichromae* Benth. similis inflorescentia valde secunda, calycibus irregulariter fissis, et corollae galea brevi (galea quam tubo ca. 3-4-plo brevior) sed foliis integris (vs. pectinatim divis) differt.

Species included: *Castilleja ortegae*, *C. pterocaulon*, and *C. lebgueana*.

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LITERATURE CITED

- Chuang, T.I. & L.R. Heckard. 1991. Generic realignment and synopsis of Subtribe Castillejinae (Scrophulariaceae - Tribe Pedicularae). *Syst. Bot.* 16:644-666.
- Eastwood, A. 1909. Synopsis of the Mexican and Central American species of *Castilleja*. *Proc. Amer. Acad. Arts* 44:563-591.
- Holmgren, N.H. 1976. Four new species of Mexican *Castilleja* (Subgenus *Castilleja*, Scrophulariaceae) and their relatives. *Brittonia* 28:195-208.
- . 1978. *Castilleja* (Scrophulariaceae) of Costa Rica and Panama. *Brittonia* 30:182-194.
- Nesom, G.L. 1992. Taxonomy of the *Castilleja tenuiflora* group (Scrophulariaceae) in México, with an overview of sect. *Castilleja*. *Phytologia* 73:389-415.